WHAT IS CLAIMED IS:

1. A dispersion compensator, comprising:

an optical component having an accumulated chromatic dispersion of -1200 ps/nm or more but less than -600 ps/nm at a wavelength of 1.55 μm; and

a housing having a volume of 500 cm^3 or less for accommodating said optical component.

2. A dispersion compensator according to claim 1, wherein the volume V (cm^3) of said housing and the accumulated chromatic dispersion AD (ps/nm) of said optical component satisfy the following relationship:

$$V \leqq -0.31 \times AD + 120 .$$

3. An dispersion compensator according to claim 1, further having, as a characteristic at the wavelength of 1.55 μm, an insertion loss of 5.9 dB or less.

4. A dispersion compensator according to claim 1, wherein the insertion loss IL (dB) at the wavelength of 1.55 μm and the accumulated chromatic dispersion AD (ps/nm) of said optical component satisfy the following relationship:

$$IL \leqq -0.0033 \times AD + 1.9 .$$

5. A dispersion compensator according to claim 1, wherein said optical component includes an optical fiber comprising:

a center core part extending along a predetermined axis and having a predetermined maximum refractive index;

a first cladding part, provided on an outer periphery

of said center core part, having a refractive index lower than that of said center core part;

a second cladding part, provided on an outer periphery of said first cladding part, having a refractive index higher than that of said first cladding part; and

a third cladding part, provided on an outer periphery of said second cladding part, having a refractive index lower than that of said second cladding part.

6. A dispersion compensator according to claim 5, further having, as a characteristic at the wavelength of 1.55 μm, a bending loss of 0.1 dB/km or less in a state wound at a diameter of 60 mm.

7. A dispersion compensator according to claim 5, wherein said second cladding part has a relative refractive index difference of 0.2% to 0.9% with reference to the refractive index of said cladding part; and

wherein said optical fiber satisfies the following conditions:

$0.19 \leqq a/c < 0.4$, and

$0.4 \leqq b/c \leqq 0.8$

where a is the outer radius of said center core region, b is the outer radius of said first cladding part, and c is the outer radius of said second cladding part.

8. A dispersion compensator, comprising:

an optical component having an accumulated chromatic dispersion of-600 ps/nm or more but less than -0 ps/nm at

a wavelength of 1.55 μm; and

a housing having a volume of 310 cm^3 or less for accommodating said optical component.

9. A dispersion compensator according to claim 8, wherein the volume V (cm^3) of said housing and the accumulated chromatic dispersion AD (ps/nm) of said optical component satisfy the following relationship:

$$V \leqq -0.31 \times AD + 120 .$$

10. An dispersion compensator according to claim 8, further having, as a characteristic at the wavelength of 1.55 μm, an insertion loss of 3.9 dB or less.

11. A dispersion compensator according to claim 8, wherein the insertion loss IL (dB) at the wavelength of 1.55 μm and the accumulated chromatic dispersion AD (ps/nm) of said optical component satisfy the following relationship:

$$IL \leqq -0.0033 \times AD + 1.9 .$$

12. A dispersion compensator according to claim 8, wherein said optical component includes an optical fiber comprising:

a center core part extending along a predetermined axis and having a predetermined maximum refractive index;

a first cladding part, provided on an outer periphery of said center core part, having a refractive index lower than that of said center core part;

a second cladding part, provided on an outer periphery of said first cladding part, having a refractive index higher

than that of said first cladding part; and

a third cladding part, provided on an outer periphery of said second cladding part, having a refractive index lower than that of said second cladding part.

13. A dispersion compensator according to claim 12, further having, as a characteristic at the wavelength of 1.55 μm, a bending loss of 0.1 dB/km or less in a state wound at a diameter of 60 mm.

14. A dispersion compensator according to claim 12, wherein said second cladding part has a relative refractive index difference of 0.2% to 0.9% with reference to the refractive index of said cladding part; and

wherein said optical fiber satisfies the following conditions:

$0.19 \leqq a/c < 0.4$, and

$0.4 \leqq b/c \leqq 0.8$

where a is the outer radius of said center core region, b is the outer radius of said first cladding part, and c is the outer radius of said second cladding part.

15. A dispersion compensator, comprising:

an optical component having an accumulated chromatic dispersion of-300 ps/nm or more but less than -0 ps/nm at a wavelength of 1.55 μm; and

a housing having a volume of 260 cm^3 or less for accommodating said optical component.

16. A dispersion compensator according to claim 15,

wherein the volume V (cm^3) of said housing and the accumulated chromatic dispersion AD (ps/nm) of said optical component satisfy the following relationship:

$$V \leqq -0.31 \times AD + 120 .$$

17. An dispersion compensator according to claim 15, further having, as a characteristic at the wavelength of 1.55 μm, an insertion loss of 2.9 dB or less.

18. A dispersion compensator according to claim 15, wherein the insertion loss IL (dB) at the wavelength of 1.55 μm and the accumulated chromatic dispersion AD (ps/nm) of said optical component satisfy the following relationship:

$$IL \leqq -0.0033 \times AD + 1.9 .$$

19. A dispersion compensator according to claim 15, wherein said optical component includes an optical fiber comprising:

a center core part extending along a predetermined axis and having a predetermined maximum refractive index;

a first cladding part, provided on an outer periphery of said center core part, having a refractive index lower than that of said center core part;

a second cladding part, provided on an outer periphery of said first cladding part, having a refractive index higher than that of said first cladding part; and

a third cladding part, provided on an outer periphery of said second cladding part, having a refractive index lower than that of said second cladding part.

20. A dispersion compensator according to claim 19, further having, as a characteristic at the wavelength of 1.55 μm, a bending loss of 0.1 dB/km or less in a state wound at a diameter of 60 mm.

21. A dispersion compensator according to claim 19, wherein said second cladding part has a relative refractive index difference of 0.2% to 0.9% with reference to the refractive index of said cladding part; and

wherein said optical fiber satisfies the following conditions:

$0.19 \leqq a/c < 0.4$, and

$0.4 \leqq b/c \leqq 0.8$

where a is the outer radius of said center core region, b is the outer radius of said first cladding part, and c is the outer radius of said second cladding part.

22. A dispersion compensator, comprising:

an optical component having an accumulated chromatic dispersion of-180 ps/nm or more but less than -0 ps/nm at a wavelength of 1.55 μm; and

a housing having a volume of 200 cm^3 or less for accommodating said optical component.

23. A dispersion compensator according to claim 22, wherein the volume V (cm^3) of said housing and the accumulated chromatic dispersion AD (ps/nm) of said optical component satisfy the following relationship:

$V \leqq -0.31 \times AD + 120$.

24. An dispersion compensator according to claim 22, further having, as a characteristic at the wavelength of 1.55 μm, an insertion loss of 2.5 dB or less.

25. A dispersion compensator according to claim 22, wherein the insertion loss IL (dB) at the wavelength of 1.55 μm and the accumulated chromatic dispersion AD (ps/nm) of said optical component satisfy the following relationship:

$$IL \leqq -0.0033 \times AD + 1.9 .$$

26. A dispersion compensator according to claim 22, wherein said optical component includes an optical fiber comprising:

a center core part extending along a predetermined axis and having a predetermined maximum refractive index;

a first cladding part, provided on an outer periphery of said center core part, having a refractive index lower than that of said center core part;

a second cladding part, provided on an outer periphery of said first cladding part, having a refractive index higher than that of said first cladding part; and

a third cladding part, provided on an outer periphery of said second cladding part, having a refractive index lower than that of said second cladding part.

27. A dispersion compensator according to claim 26, further having, as a characteristic at the wavelength of 1.55 μm, a bending loss of 0.1 dB/km or less in a state wound at a diameter of 60 mm.

28. A dispersion compensator according to claim 26, wherein said second cladding part has a relative refractive index difference of 0.2% to 0.9% with reference to the refractive index of said cladding part; and

wherein said optical fiber satisfies the following conditions:

$0.19 \leqq a/c < 0.4$, and

$0.4 \leqq b/c \leqq 0.8$

where a is the outer radius of said center core region, b is the outer radius of said first cladding part, and c is the outer radius of said second cladding part.

29. A dispersion compensator, comprising:

an optical component having a predetermined accumulated chromatic dispersion at a wavelength of 1.55 μm; and

a housing for accommodating said optical component,

wherein the volume V (cm^3) of said housing and the accumulated chromatic dispersion AD (ps/nm) of said optical component satisfy the following relationship:

$V \leqq -0.31 \times AD + 120$.

30. A dispersion compensator according to claim 29, wherein the insertion loss IL (dB) at the wavelength of 1.55 μm and the accumulated chromatic dispersion AD (ps/nm) of said optical component satisfy the following relationship:

$IL \leqq -0.0033 \times AD + 1.9$.

31. A dispersion compensator according to claim 29,

wherein said optical component includes an optical fiber comprising:

a center core part extending along a predetermined axis and having a predetermined maximum refractive index;

a first cladding part, provided on an outer periphery of said center core part, having a refractive index lower than that of said center core part;

a second cladding part, provided on an outer periphery of said first cladding part, having a refractive index higher than that of said first cladding part; and

a third cladding part, provided on an outer periphery of said second cladding part, having a refractive index lower than that of said second cladding part.

32. A dispersion compensator according to claim 31, further having, as a characteristic at the wavelength of 1.55 μm, a bending loss of 0.1 dB/km or less in a state wound at a diameter of 60 mm.

33. A dispersion compensator according to claim 29, wherein said second cladding part has a relative refractive index difference of 0.2% to 0.9% with reference to the refractive index of said cladding part; and

wherein said optical fiber satisfies the following conditions:

$0.19 \leqq a/c < 0.4$, and

$0.4 \leqq b/c \leqq 0.8$

where a is the outer radius of said center core region, b

is the outer radius of said first cladding part, and c is the outer radius of said second cladding part.